

Turnover of Interbank Payment and Settlement Systems

2000–2001 Q1–Q2

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1 A review of domestic payment systems

Interbank payment systems include:

- the Real-Time Gross Settlement System (VIBER),
- the Interbank Clearing System (ICS), and
- the three card settlement systems (Europay NNER, VISA NNER and GBC).

VIBER (the Hungarian abbreviation for RTGS) serves the exclusive purpose of executing funds transfers, accepting instructions for both bank-to-bank transfers and transfers for customers, with the latter accounting for a smaller portion of turnover. Bank-to-bank clearing and settlement of transfers takes place as one process: in other words, simultaneously with the sending of a payment message there is a final and irrevocable settlement between two participants of the system. In addition to VIBER, the National Bank of Hungary (NBH) also provides an accounts service for customers to settle credit and debit positions resulting from the Interbank Clearing System (ICS) settlement positions (GIRO IBI matrix), settlement of certain transactions with the central bank, as well as charges, fees and costs relating to central bank services. This system also manages accounts for those central bank customers which do not participate in VIBER. Although this accounting system is not regarded as a payment system, movements on its accounts must be taken into consideration as well in order to obtain a complete picture of turnover on VIBER participants' central bank accounts.

ICS, which is primarily responsible for the clearing of payment orders initiated by customers, is operated by GIRO Ltd. ICS supports numerous payment methods, ranging from simple transfers through direct debit and credit to spot and forward collection orders, the use of letters of credit, cheque collection and bill-of-exchange collection. ICS applies batch processing. Direct participants of the system maintain accounts at the NBH.

The real-time securities settlement system of the Central Clearing House and Depository Ltd. (KELER) and VIBER are closely interlinked. Interconnection of the real-time payment system and the securities settlement system promotes a high-standard of quality and safe settlement of securities transactions, based on the principle of delivery versus payment (DVP).

KELER's cash accounts keeping system is not regarded as a separate payment system, although it exhibits many of the features of payment systems. Parties maintaining cash accounts at KELER include investment firms as defined by the Securities Act and commodity exchange service providers. KELER also provides DVP settlement for these accounts.

VIBER and ICS, the two systems responsible for clearing and settlement of interbank forint payments, have complementary activities. They have different operating hours, which enables only those payment instructions to be settled having the necessary funds available on the central bank accounts or in the form of intraday credit.¹ This entails close interrelationship between the systems, since VIBER cannot open unless the interbank positions based on ICS clearing have been settled on the NBH accounts.

Credit institutions, KELER, the Hungarian State Treasury (MÁK) and the Hungarian Post Office participate either directly or indirectly in both payment systems. Small credit institutions (mainly savings cooperatives) are typically indirect participants, i.e. they are correspondent

¹ The amount of securities tied up at KELER as cover for the intraday credit extended at the NBH.

customers of a direct participant (a bank or the central bank). At end-2000, ICS and VIBER had 57 and 42 participants, respectively, and in June 2001, the number of participants was identical with the end-of-year figures.

In addition to its regulatory and oversight powers, the central bank has a dual responsibility. Not only is it a settlement bank, but it also acts as a direct participant in VIBER and ICS. Liquidity in the systems is guaranteed by the account balances held by the participants at the NBH and the intraday credit extended by the NBH to participants with credit institution status. Due to the gross nature of settlement, participants incur no credit risk from one another.

Card payments are processed in net settlement systems. The GBC system is operated by the Giro Bankcard Ltd, a clearing house for credit institutions, while the VISA and Europay net settlement systems are operated by foreign credit card companies.

2 Share of turnover in the two main payment systems

Distribution of turnover between the systems stems partly from their different functions and partly from the free choice of users, with no limitation imposed in terms of value per transfer.

The role of ICS

ICS processes large numbers of small-value individual payment orders. The orders received in batches are processed during the night.² Following the launch of the VIBER system, ICS clearing of bank-to-bank transfers has become minimal. By contrast, the number of direct debit and credit transactions has risen strongly, accounting for over 30 per cent of total transactions. Investment firms (stock brokers) also frequently use ICS to replenish liquidity on their cash accounts held at KELER.

The role of VIBER

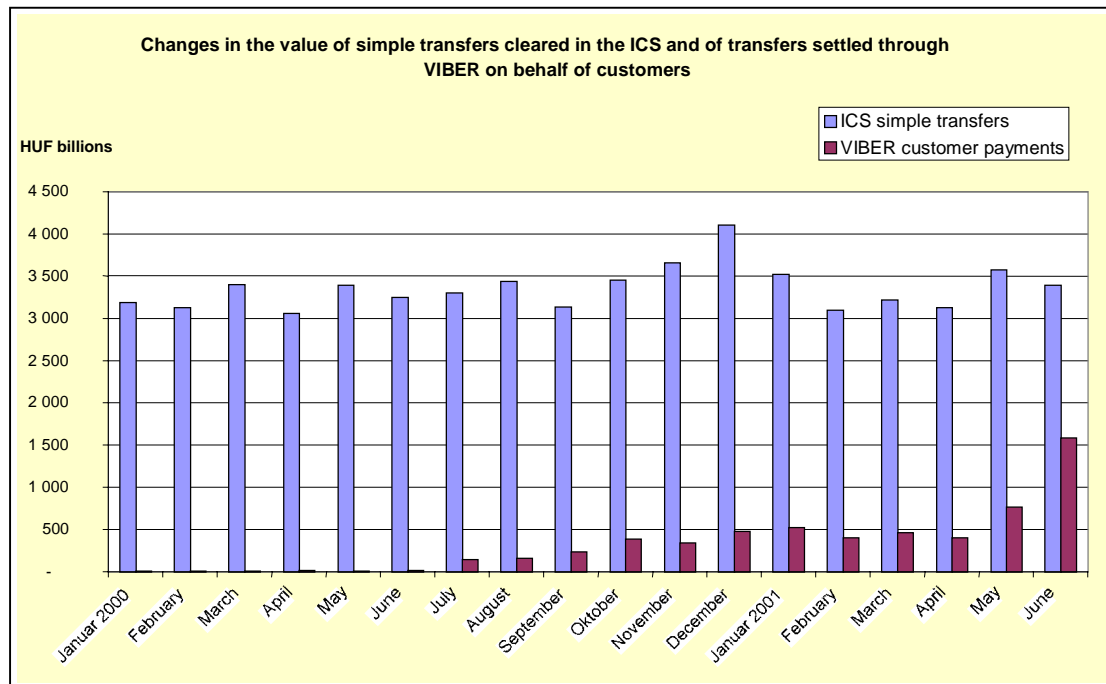
VIBER is responsible for settling large-value, or urgent payments, including typically bank-to-bank transfers, transactions with the central bank (deposits, credit extension, inward and outward cash payments), and bank card settlements, as well as the cash leg of foreign exchange or OTC and stock exchange securities transactions cleared by KELER.

Banks can send payment orders on behalf of their customers since 1 March 2000. Since 1 July, every VIBER participant providing payment services for customers has been obliged to accept payments transferred through VIBER to their customers' accounts at each branch where accounts are maintained, as well as to make those funds available to the customer on the same day. Entering customers' payment orders into VIBER is not a service banks must provide on a compulsory basis; nevertheless, it is in their interest to provide a real-time service for their customers. The fact that customers' funds transfers became possible as of 2000 did not result in a major shift in turnover- share between VIBER and ICS.

² A payment order accepted by the GIRO for D day central bank settlement was entered into ICS by the sending bank on D day -1 or during the early morning hours of day t (after debiting its own customer's account). The payment arrives at the beneficiary's bank on D day and is credited to the customer's account on the same day (in the case of correspondent banks or savings cooperatives there is another one day allowed).

Chart 1 shows changes in the value of transfers on behalf of customers and the use of the two systems.

Chart 1



Simultaneously with the introduction of payments on behalf of customers, VIBER participants made an agreement³ to dispatch customers' transfers to VIBER within two hours and to credit incoming payments to the beneficiary's account within a maximum of two hours.

The NBH's accounts service

Interbank positions established in the course of ICS clearing (IBI matrix)⁴ are settled on the accounts maintained by customers at the NBH, in addition to the forint leg of foreign exchange (FX) transactions with the central bank, central bank credit extension, repayment of deposits on maturity and the settlement of interest payments, etc.

Distribution of interbank turnover

In 2000, turnover in interbank payments amounted to **HUF 126,436 billion**, nearly ten times the amount of GDP. Although this reflects rapid growth (comparable figure for 1995 are only five times higher than GDP), it falls far short of similar indicators in countries with advanced money and capital markets. Turnover during the first six months of 2001 amounted to **HUF 69,606 billion, up by 11.3 per cent** on a year earlier (HUF 62,514 billion), with especially robust growth experienced during the final months.

³ For the text of the agreement, please see the 13 July 2000 issue of the Financial Gazette.

⁴ In order to avoid double counting of ICS turnover, data on turnover do not contain the matrix sum of interbank positions.

In terms of value, the ICS system accounts for less than one-third of turnover and the NBH's systems (VIBER and the accounts service, which is not real time) for over two-thirds. The share of bank card settlements is negligible.

Chart 2

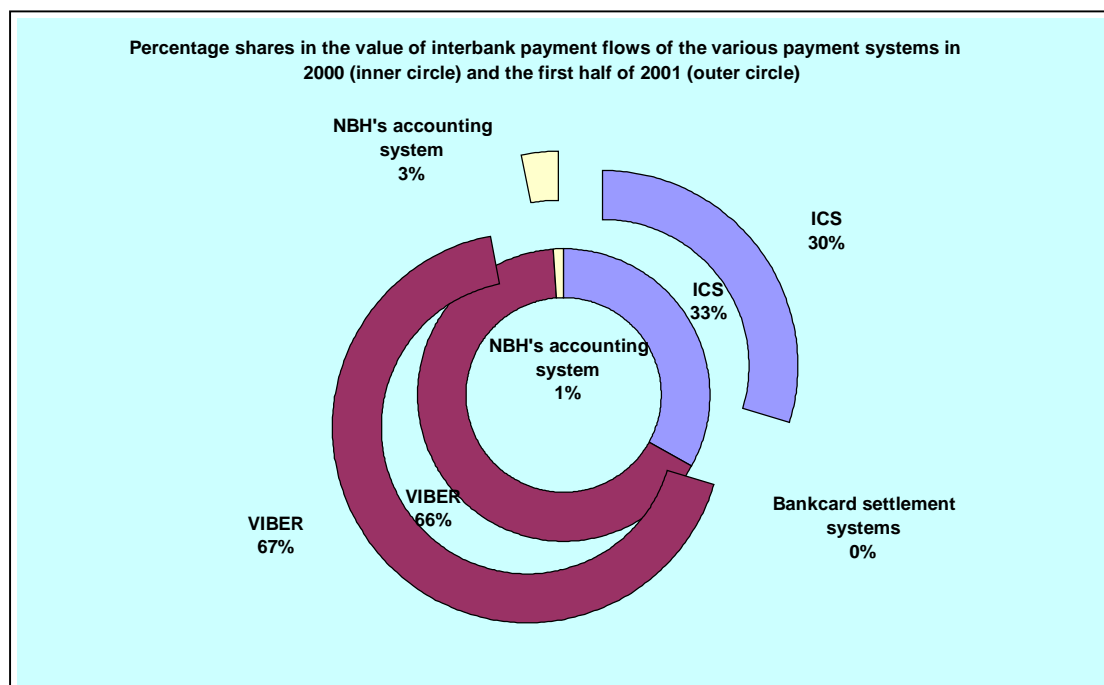


Table 1

Value of interbank payments (HUF billions)		
	2000	2001 H1
ICS	41 905	20 770
VIBER	83 131	46 792
NBH's accounts service	1 384	2 036
Bank card settlement system	16	8
Total	126 435	69 606

In 2000, ICS accounted for over 99.8 per cent of a total number of **126 million** interbank payments, while the NBH settled 201,000 payment orders. The first six months of 2001 showed a similar trend in terms of the number of payments.

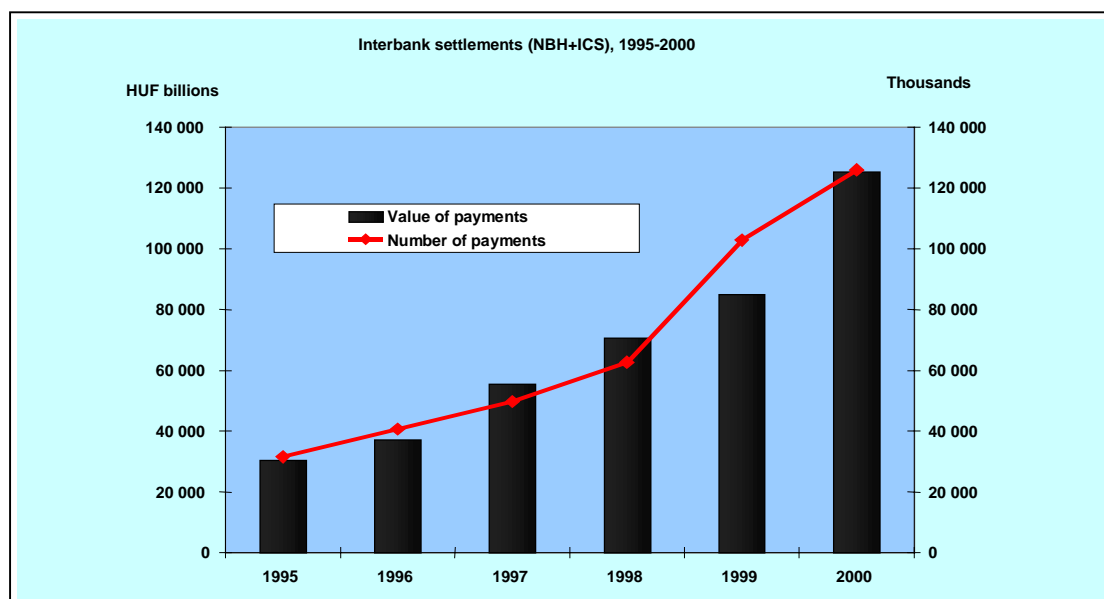
In respect of turnover in the NBH's systems, VIBER accounts for over 98 per cent of the total value and roughly 80 per cent of the number of payment transactions.

3 Settlement turnover in recent years

Settlement turnover has been growing at a steady rate of over 20 per cent over the past five years. However, the 64 per cent jump in 2000, depicted in Chart 3, is partly related to a change in the accounting method. After the launch of VIBER, the database was extended, with the NBH

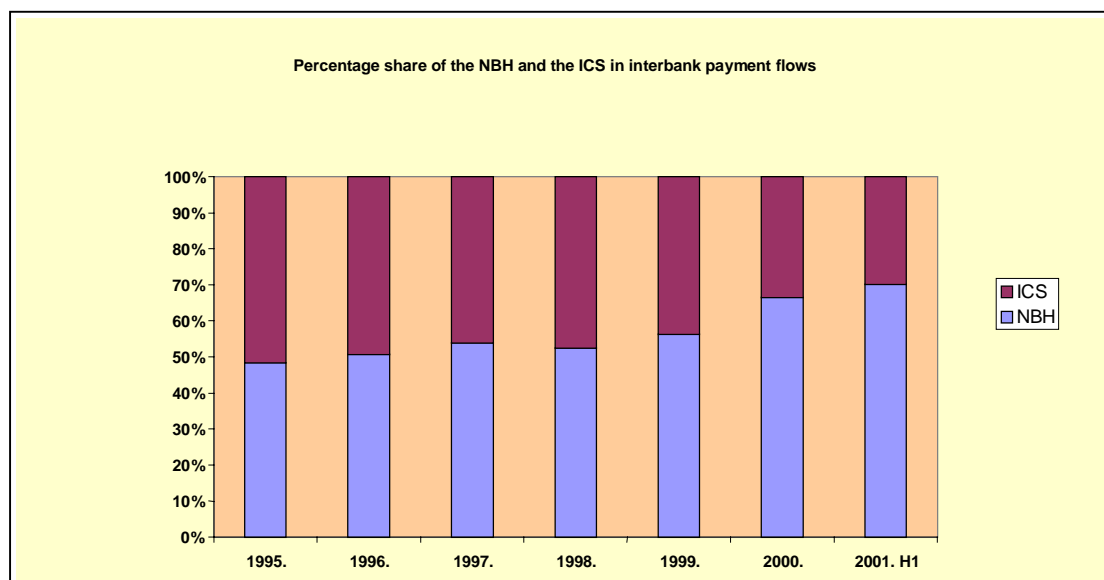
statistics now also containing DVP settlements and other central bank transactions, in addition to the earlier bank-to-bank payments.

Chart 3



Over the past few years, the NBH has settled an increasing portion of payments in terms of value, while the distribution in terms of the number of settlements has remained virtually unchanged. Due to a rise in the value of real-time settlements, the two-thirds share of the NBH systems seen over the past year has become even larger, with VIBER and the NBH accounts system accounting for a 78 per cent share in June 2001.

Chart 4



4 Key payment statistics of the individual systems

4.1 Interbank Clearing System

ICS has been in operation since November 1994, processing a steadily higher value and volume of payment orders. From 1999, growth in terms of value started to lag slightly behind that in terms of quantity. This tendency stems partly from the wider use of direct debit and credit transactions and partly from the fact that VIBER has gradually taken over the settlement of payment orders that are large in terms of value but negligible in terms of number.

Chart 5

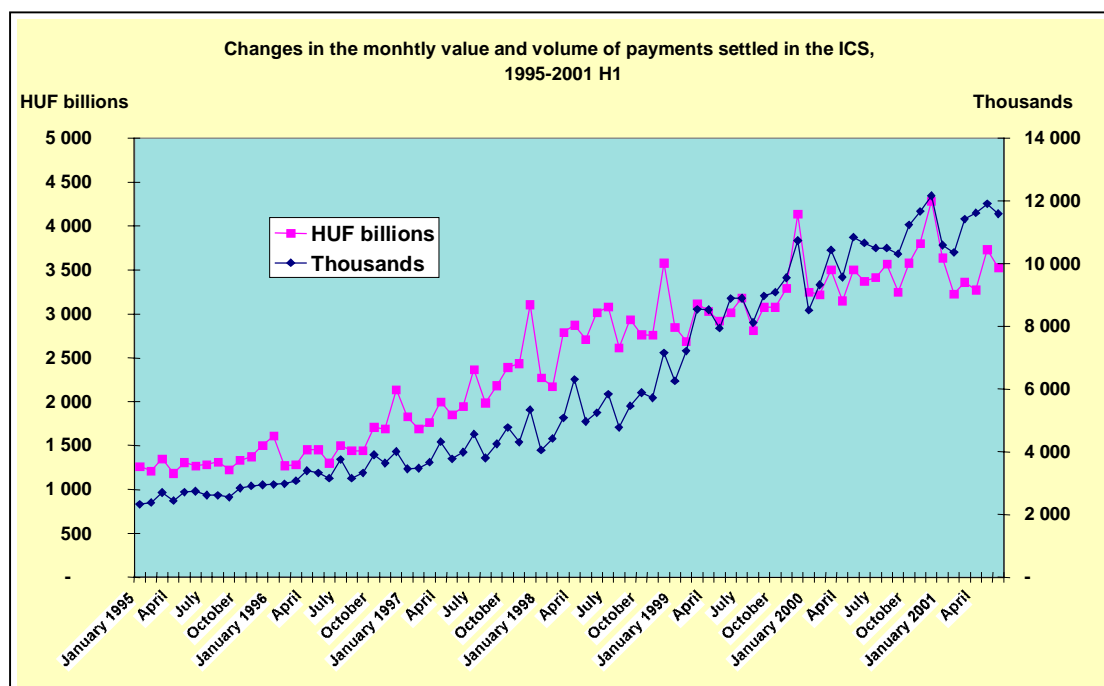


Table 2 shows a breakdown of ICS clearing by payment method. Clearly, simple transfer is the predominant method of payment, accounting for nearly the total value of turnover, and also comprising a substantial share in terms of number. Furthermore, the proportion of batch transfers and collections is also high in terms of number, with the remaining payment methods holding only marginal shares.

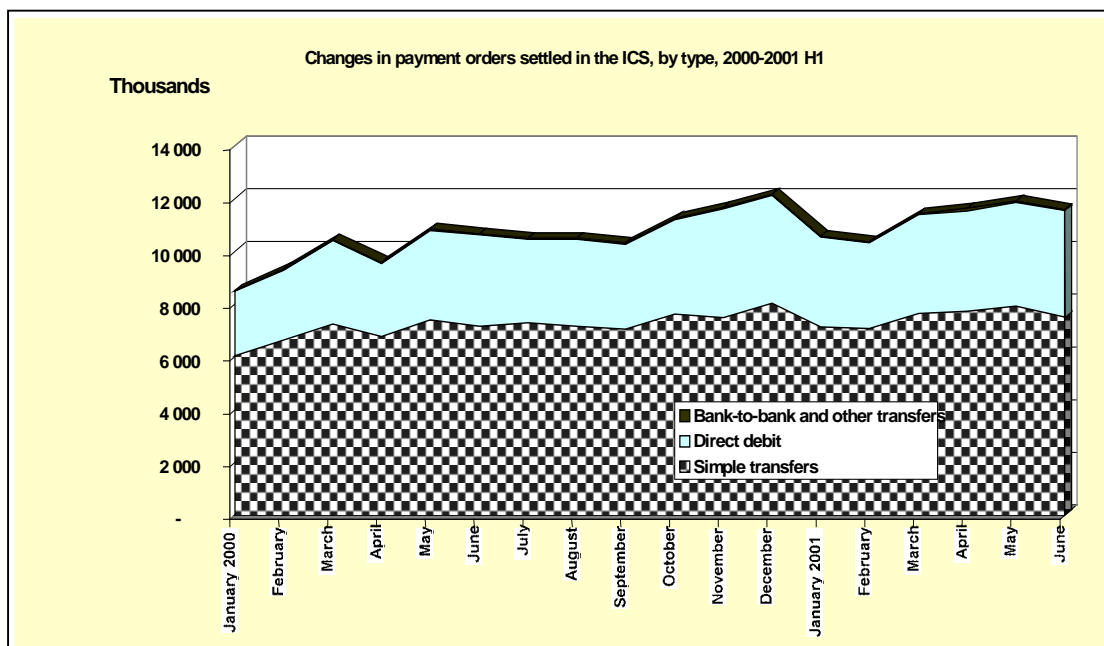
Table 2

Breakdown of payment orders settled in the ICS							
	2 000				2001 H1		
	Value		Quantity		Value		Quantity
	HUF billions	%	Thousands	%	HUF billions	%	Thousands
Simple transfers	40 500	96,6	85 907	68,3	19 934	96,0	45 015
Bank-to-bank transfers	48	0,1	0	0,0	13	0,1	0
Direct credit	1 104	2,6	21 410	17,0	680	3,3	12 518
Direct debit	71	0,2	17 964	14,3	43	0,2	9 741
Other orders	163	0,4	327	0,3	92	0,4	158
Rejected payments	20	0,1	166	0,1	8	0,0	76
Interbank Clearing System	41 905	100,0	125 774	100,0	20 770	100,0	67 508

- Seventeen banks account for 93 per cent of simple transfer orders⁵ in terms of value (those with payment flows exceeding HUF 50 billion per month) and 95 per cent in terms of volume.
- In respect of transfers in batches, the Hungarian State Treasury and another 12 banks account for 97 per cent⁶ of turnover. Twelve banks receive 95 per cent of batch transfers,⁷ with the rest of the ICS participants holding only a negligible share.
- 37 per cent⁸ of collections in batches are initiated by two banks, while two large banks receive 71 per cent⁹ of the total.

Chart 6 shows changes in the volume of transfers in a breakdown by payment type.

Chart 6



The factors that gave major impetus (both in terms of value and number) to the development of payments processing in batches include the increasingly widespread practice of crediting wages to accounts, as well as a rise in the number of service providers collecting charges in batches, as shown in Chart 7.

⁵ These figures are based on December 2000 data.

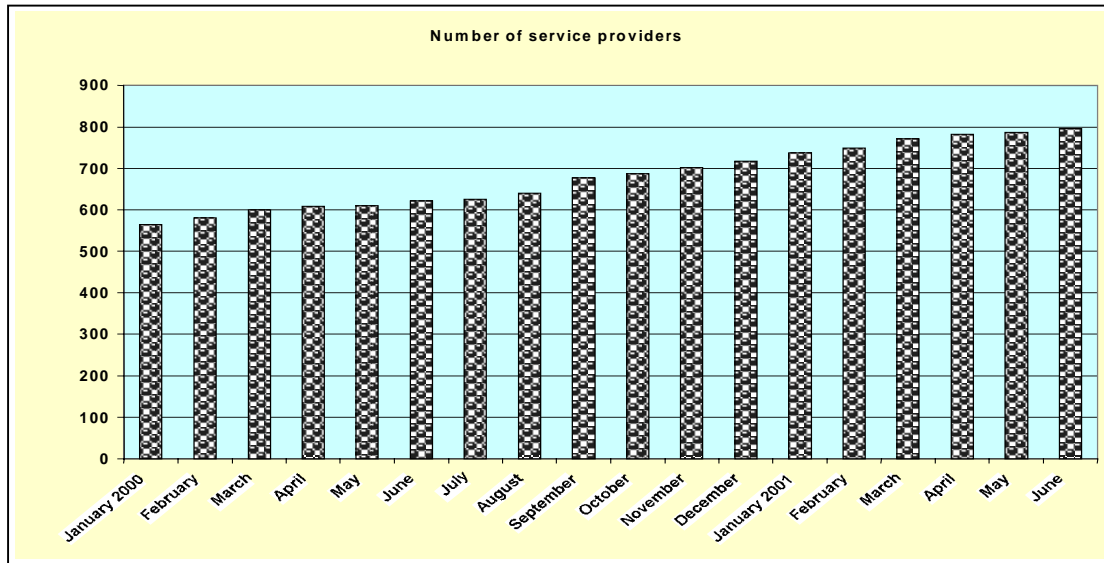
⁶ They send payments in excess of HUF 1 billion per month.

⁷ They receive payments in excess of HUF 1 billion per month.

⁸ They initiate payments in excess of HUF 1 billion per month.

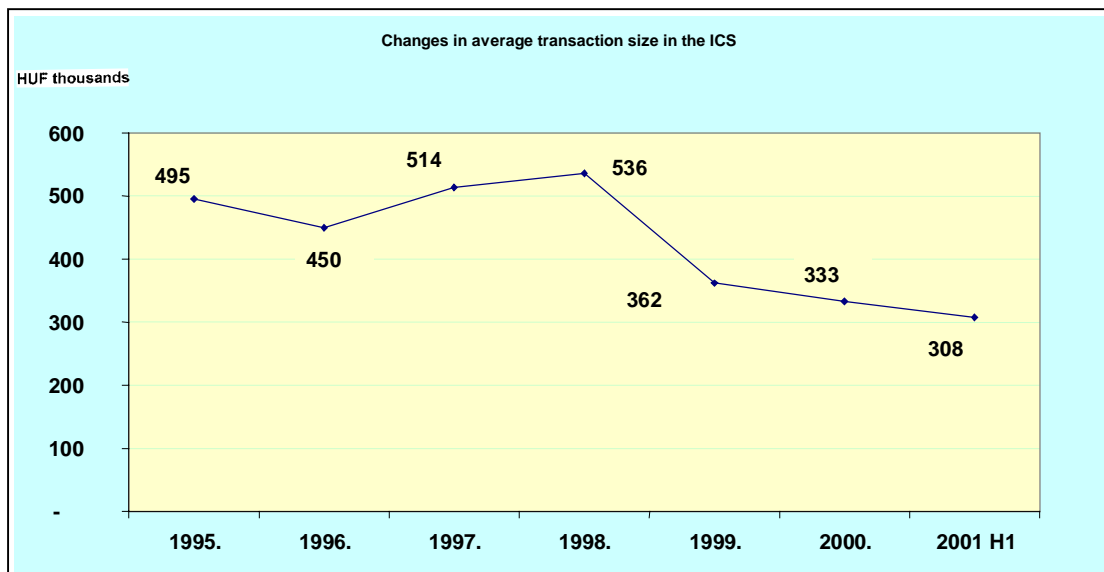
⁹ They receive payments in excess of HUF 1 billion per month.

Chart 7



The average value per payment order processed in ICS amounted to **HUF 308,000** in 2001, reflecting a downward trend in nominal terms over the years.

Chart 8



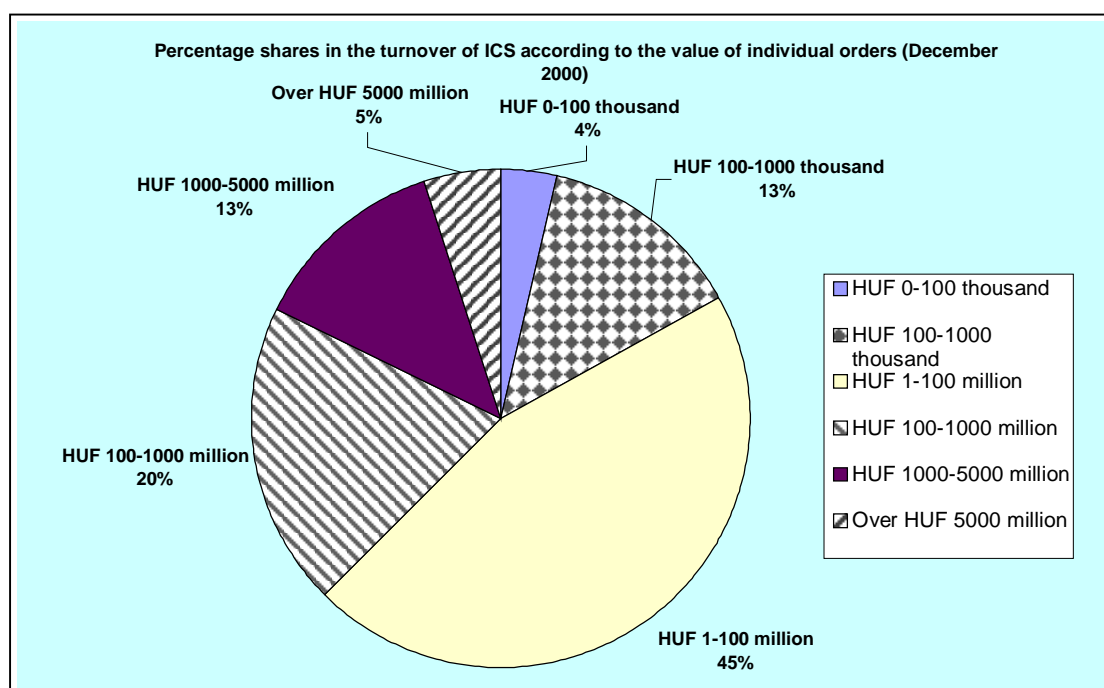
This decline has multiple causes, the primary one being a fall in the proportion of large-value payments and a rise in that of small-value payments:

- An increasing portion of bank-to-bank transfers are processed in the VIBER system (with the average value of bank-to-bank transfers processed by ICS down from HUF 391.6 million per transfer in 1999 to HUF 261.9 million per transfer in 2000, and to an average of HUF 181.9 million in the first half of 2001).

- Simple transfers rose in terms of volume from 75 million in 1999 to 86 million in 2000 (by 14.6 per cent), and in terms of value from HUF 36,000 billion in 1999 to HUF 40,500 billion in 2000 (by 12.5 per cent), whereas the average transfer size dropped from HUF 482,200 to HUF 471,400.
- Batch transfers rose from HUF 573 billion in 1999 to HUF 1,104 billion in 2000 (by 92.6 per cent) in terms of value, and from 13.2 million to 21.4 million, by 62.1 per cent, in terms of volume. The average value per transfer amounted to HUF 51,500 in 2000.
- Batch collections, with an average size of HUF 3,927 each, rose from HUF 48 billion to HUF 71 billion (47.9 per cent) in terms of value, and from 14 million to 18 million (28.6 per cent) in terms of volume.

Chart 9 shows the value of ICS turnover in a breakdown by individual payment size.

Chart 9



As shown in Chart 9, ICS also processes large-value individual payments, even including transfers of over HUF 5 billion (in December 2000, for instance, six banks and the State Treasury gave the ICS system payment instructions amounting to HUF 200 billion altogether, comprised of payments of over HUF 5 billion each). On the other hand, VIBER also settles payment orders of surprisingly small value. Table 3 shows the turnover of the two systems in a breakdown by value in December 2000 and June 2001.

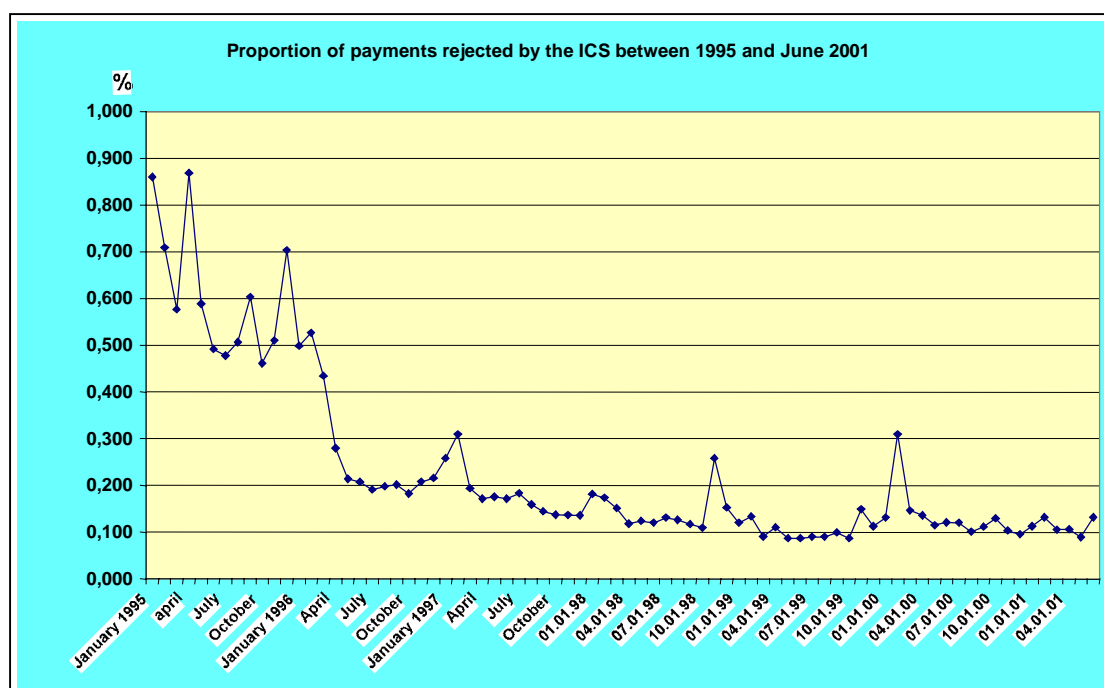
Table 3

Value ranges	Turnover volume in terms of number			
	December 2000		June 2001	
	ICS	VIBER	ICS	VIBER
HUF 0-1 million	7 555 228	1 010	7 113 506	1 588
HUF 1-5 million	333 525	1 558	284 268	1 916
HUF 5-10 million	44 331	653	34 806	911
HUF 10-100 million	33 828	3 709	25 653	4 340
HUF 100-500 million	2 744	4 523	2 046	8 654
HUF 500-1000 million	334	2 252	296	3 965
HUF 1000-5000 million	266	1 220	235	3 555
Over HUF 5000 million	16	85	17	402
Total	7 970 272	15 010	7 460 827	25 331

A comparison of the December and the June data reveals a diverging trend in the two systems. ICS always records peak turnover in December, and while this also tends to be the case with VIBER, the June 2001 data also reflect a pick-up in money market payment flows in the wake of foreign exchange liberalisation and the widening of the exchange rate band.

In recent years, the proportion of payment orders rejected by ICS has fallen gradually in terms of value from 0.9 per cent at the start of the system to below 0.3 per cent, with some fluctuations.

Chart 10



The fall in the number of rejections implies that standardisation of procedures, accurate completion of order forms, and checking by the banks themselves, are crucial for efficient operation of the system.¹⁰

4.2 Payments settled in the NBH's systems

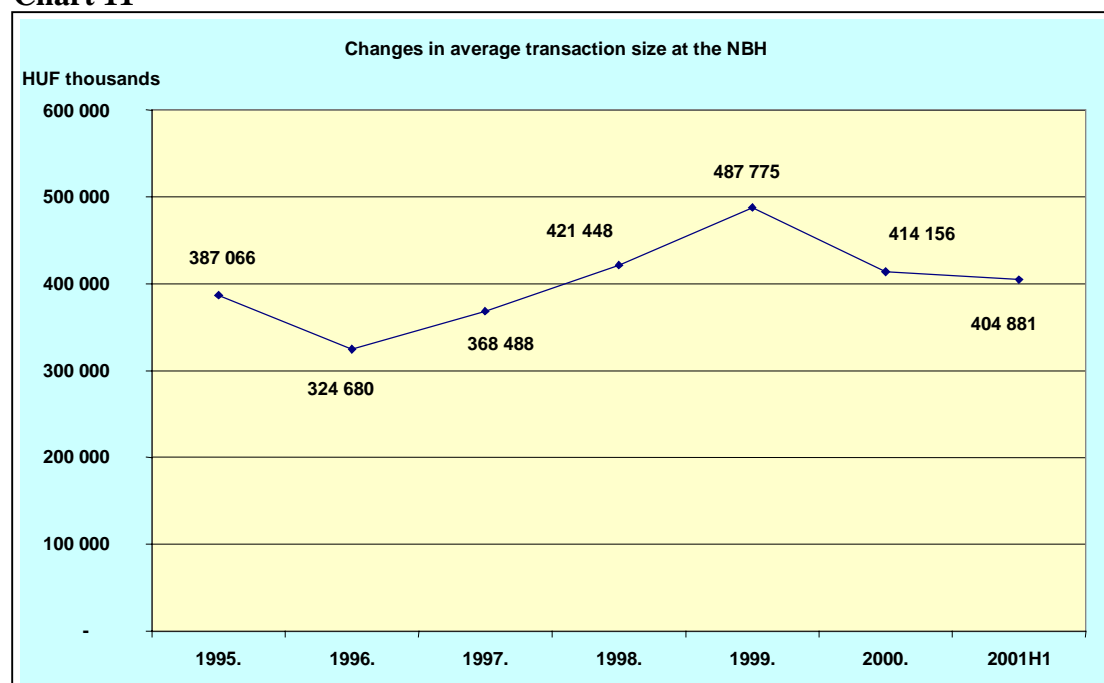
On an annual basis, payment orders settled in the NBH's systems exceed 200,000 in terms of number and HUF 83,000 billion in terms of value. Large-value payments are usually settled in VIBER. Table 4 shows the quantity and value of payment orders entered into the NBH's system broken down by type, together with the annual averages for the individual types.

Table 4

Decomposing transfers conducted by NBH in 2000 and 2001 H1						
	2000			2001 H1		
	Total value HUF billions	Quantity Thousands	Average value HUF millions	Total value HUF billions	Quantity Thousands	Average value HUF millions
VIBER transfers	82 131	158,8	517,3	46 792	98,3	476,0
- Interbank transfers	43 757	70,8	618,1	25 359	43,2	586,7
- DVP transfers	14 627	46,0	317,9	9 614	28,6	336,3
- Customer transfers	1 789	9,0	198,9	4 128	13,9	297,3
- Central bank and other transfers	21 958	33,0	665,5	7 692	12,6	609,5
Other non-VIBER transactions	1 384	42,9	32,3	2 036	22,3	91,3
- FX transactions with central bank	825	34,3	24,0	1 829	18,2	100,3
- Deposits with central bank	236	0,7	357,8	101	0,3	316,0
- Other transactions	323	7,9	40,9	107	3,8	28,5
Total transactions with NBH	83 515	201,7	414,2	48 829	120,6	404,8

Prior to 2000, the average size per payment at the NBH followed an upward trend. The decline seen over the last two years has been partly due to an increase in the number of funds transfers initiated by customers (as these are smaller in value on a per transfer basis than bank-to-bank transfers), and partly to changes in statistical data collection.¹¹

Chart 11

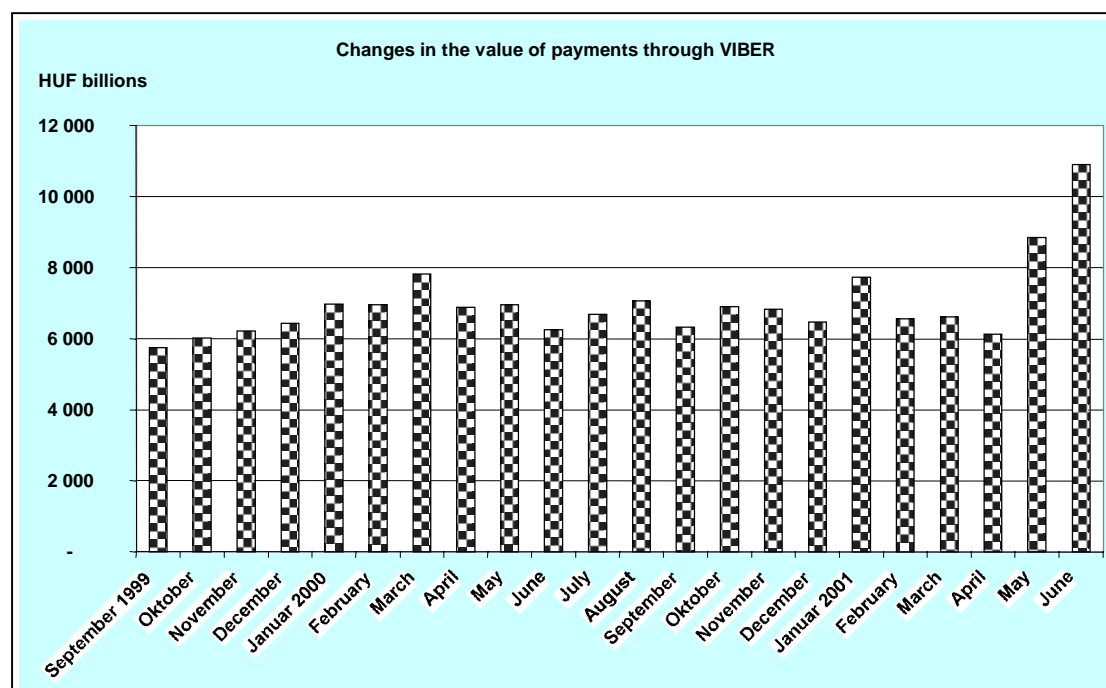


¹⁰ There are no statistics available on rejections by the VIBER system, as the banks return faulty payment orders as new messages.

4.2.1 VIBER

After following an initially upward trend, the value of payment orders settled by VIBER has been flat to falling. The settlement of orders on behalf of customers, available as of June 2000, brought no considerable change. Turnover began to expand at a rapid pace from the middle of 2001. Chart 12 shows turnover in terms of value.

Chart 12

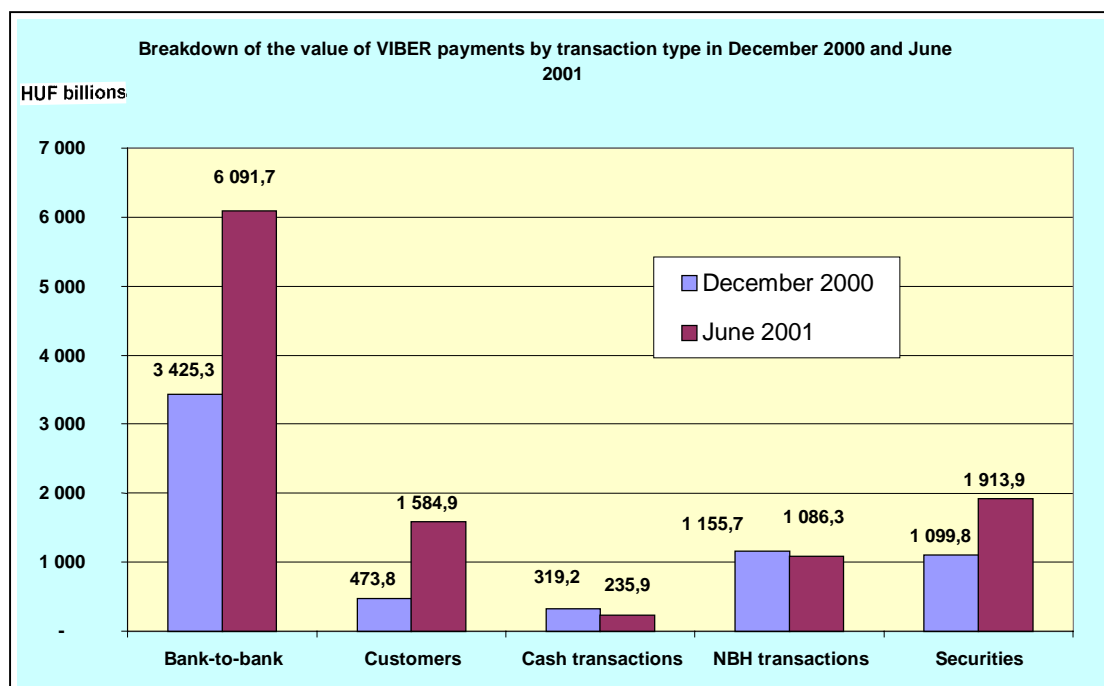


VIBER is most frequently used for settling bank-to-bank transfers. Since the Hungarian Post Office became a direct participant in the system in October 2000, there has also been bilateral settlement between the Post Office and the banks, as post offices also take part in financial intermediation. Transactions with the NBH comprise banks' deposit making at the central bank, credit extension, inward and outward cash payments, interbank settlement of net bankcard balances, and the accounting of a potential second IBI matrix for ICS.¹²

¹¹ Data on non-real-time transactions of a lower-than-average size, previously not reported in the statistics, have been added for part of 1999 and for the whole of 2000.

¹² The IBI matrix II contains credit and debit items arising from the morning processing of payment orders being queued due to a shortfall of covering funds during the night-time processing. These are settled in VIBER.

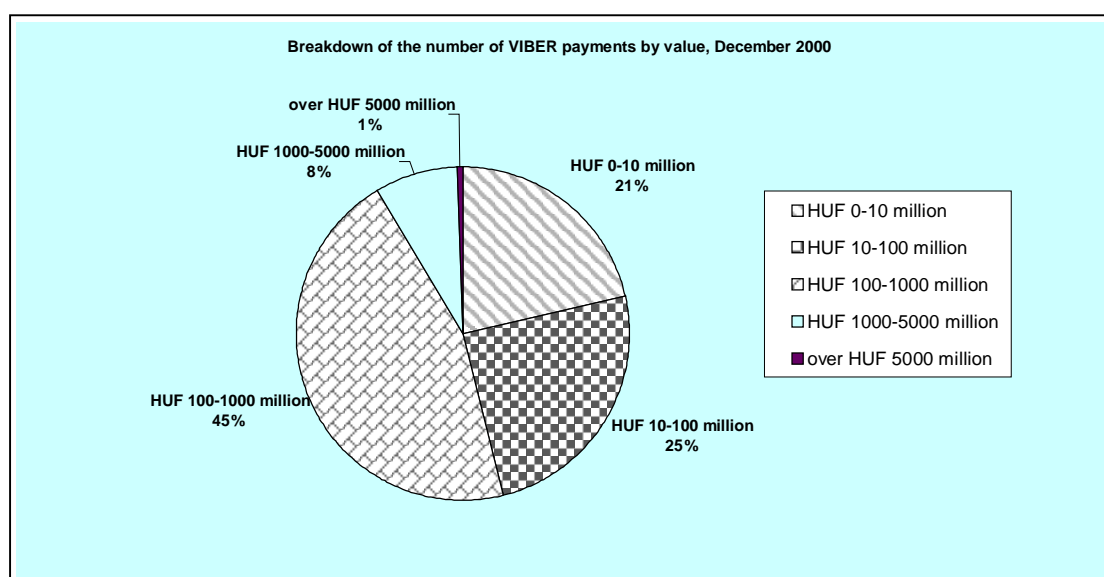
Chart 13



The NBH transactions and the securities transactions shown in Chart 13 can only be settled in VIBER. The average value of settlements stood at HUF 517 million in 2000 and HUF 476 million in the first half of 2001.

Data for December 2000 indicate that over half of payments involved amounts of over HUF 100 million, and 21 per cent of them less than HUF 10 million.

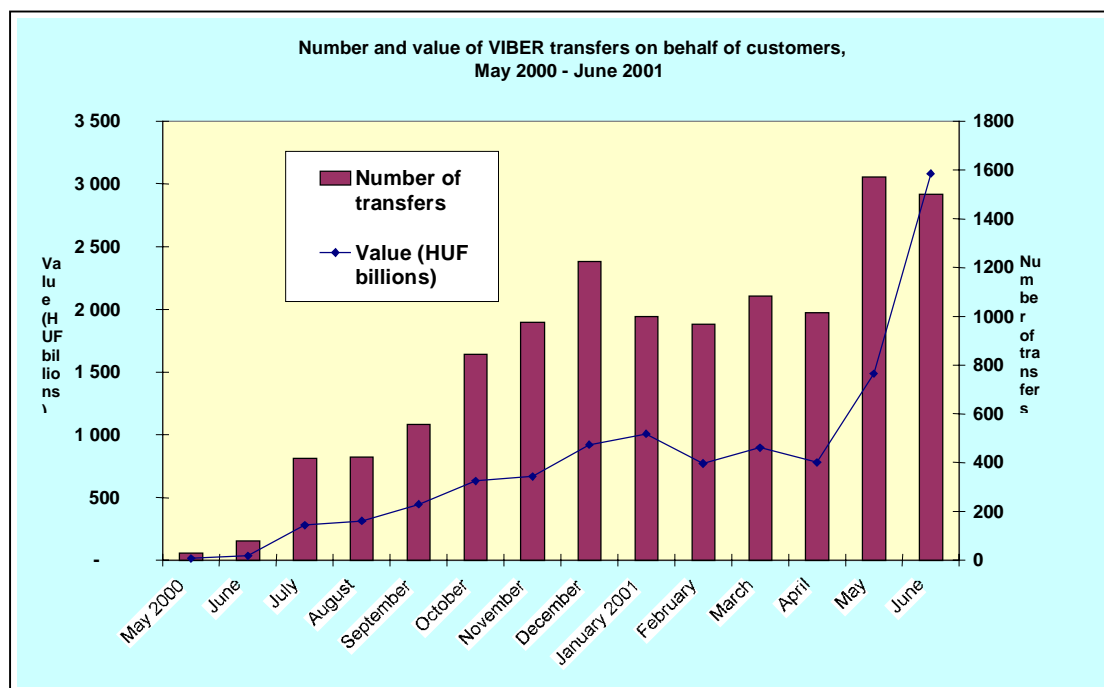
Chart 14



The number of customers' transfers settled in VIBER grew at a rapid pace in the first year after the system was launched, and this year has also witnessed significant increases, especially in the

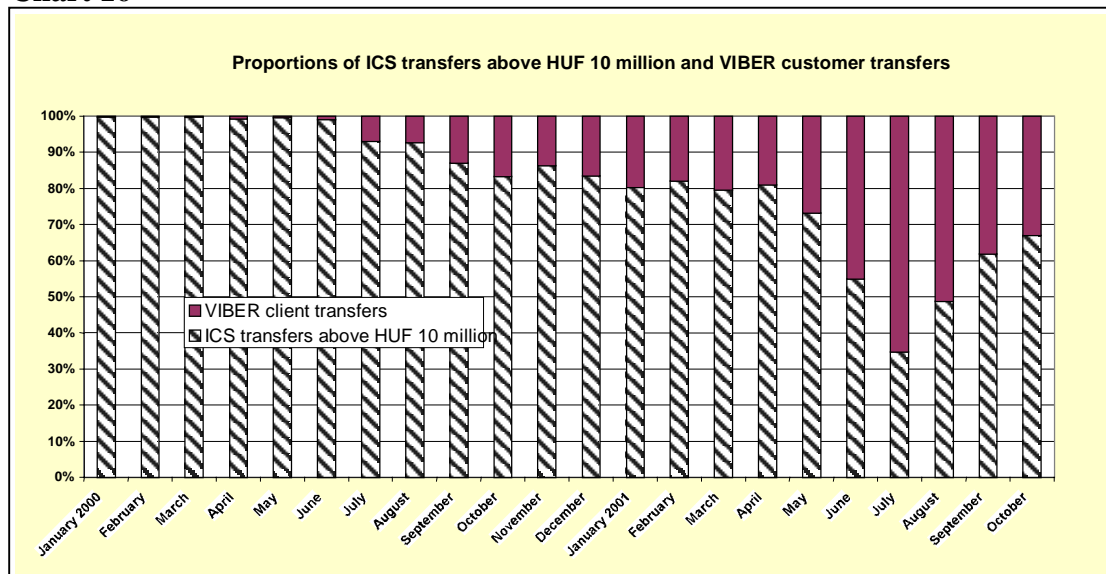
value of payment orders. Although the first year's monthly turnover of HUF 400 billion had quadrupled by mid-2001, it is still significantly below potential levels.

Chart 15



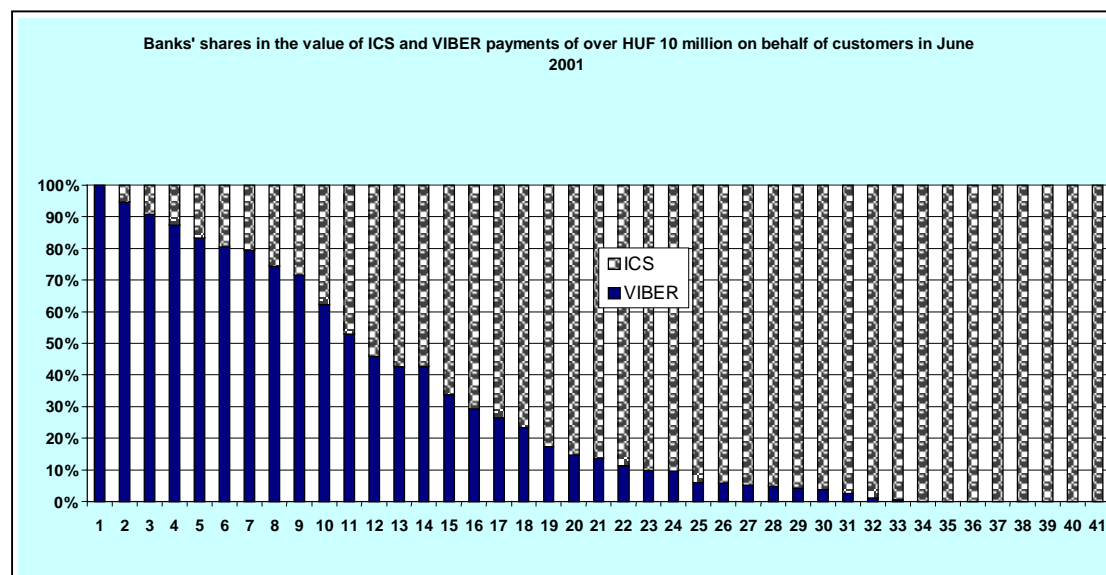
In December 2000, the real-time system received merely **0.03 per cent**, i.e. **2,380** payment orders (HUF 473 billion), of a total of 8 million orders (HUF 4,600 billion) initiated by customers in the domestic payment systems. Ten VIBER participants accounted for 83 per cent of this amount. The two systems' share in customers' payment orders changed very slowly during the course of the next few months. In June 2001, the real time system received **0.04 per cent**, i.e. **2,917** payment orders (HUF 1,585 billion), of a total of 7.5 million orders (HUF 5,000 billion). In terms of the number of payment orders sent to VIBER, two participant banks accounted for the highest share, with nine banks sending no orders whatsoever.

Chart 16 indicates that payments on behalf of customers of over HUF 10 million each, considered to be large-value payments, are being only slowly switched over into VIBER, and although in June 2001 VIBER accounted for a 45 per cent share in such orders, this was due to an upsurge in the per-payment value of orders initiated by customers.

Chart 16

It is typical of the period under review that of the 42 VIBER participants eight account for roughly 60 per cent of total payment orders both in terms of value and number. The period also witnessed a realignment in terms of which banks had the highest turnover. This was primarily because in the wake of foreign exchange liberalisation, the turnover of custodian banks acting as the intermediaries of non-resident investors increased substantially.

Chart 17 shows how individual banks divided their large-value payment orders between the two systems. Clearly, a great number of VIBER participants choose other than real-time processing to serve their customers.

Chart 17

The reason for customers' infrequent use of the real-time system lies partly in the high fees charged by banks and partly in inadequate provision of information (by banks). ICS processes

on behalf of customers about 2,000-3,000 such large-value payments every month that would have been wiser to send to VIBER on the basis of the relevant banking fees.

Some of the arguments for using VIBER for the settlement of customers' large-value payment orders are as follows:

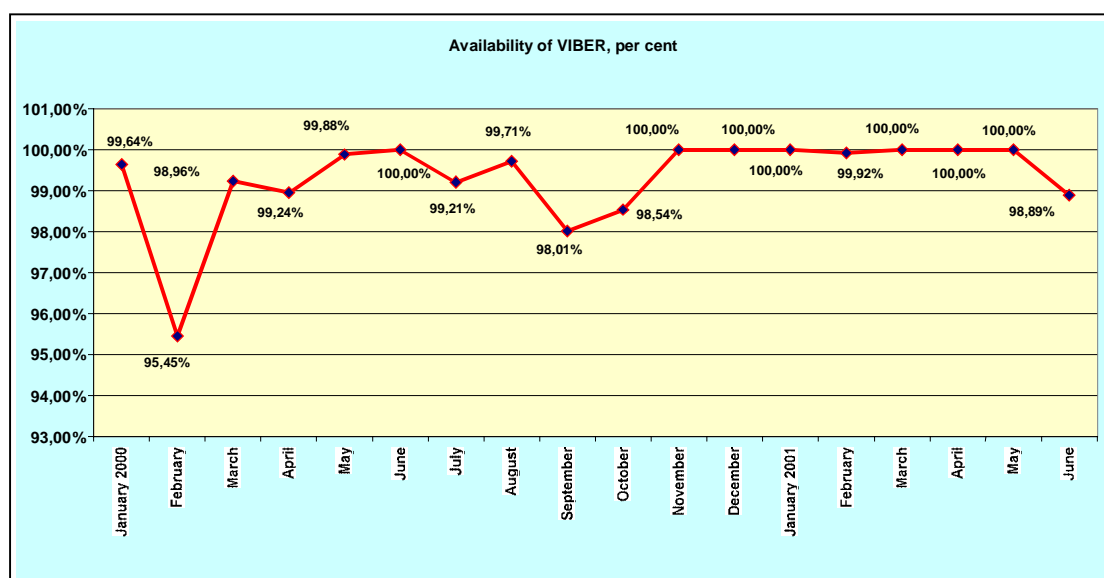
- the total value of such orders is high (about HUF 2,000-3,000 billion per month), and in ICS participants have lower flexibility in managing their liquidity risk than in VIBER;
- it would improve the efficiency of customers' funds management and counterparty risk management (funds would be available to customers on the day the transfer was initiated, and the duration of mutual indebtedness would shorten).

In EU member states, payments in excess of EUR 50,000 are considered to be large-value payments. Accordingly, payment orders for over HUF 10 million can be regarded as being in the large-value category. From the point of view of security and efficiency, such payment instructions could best be settled in the real-time system. **Over the final four months of 2000, a monthly volume of 30,000 payment orders of over HUF 10 million each were processed in the ICS system, with a total value of HUF 2,000 billion.** This accounted for 86 per cent of large-value payment orders on behalf of customers in terms of value and 94 per cent in terms of numbers. **The corresponding figures for June 2001 were up to 31,000 and HUF 3,500 billion, respectively.**

Availability of VIBER

VIBER has operated reliably, with its rate of availability (actual operating time as a percentage of official operating hours) shown in Chart 18.

Chart 18



An over 99-per-cent rate implies that less than one hour per month is lost. The lowest rate was recorded in February 2000, with a one-off stoppage of 5.4 hours. According to the ECB's annual report, the availability rate of TARGET ranged between 98.5 and 100 per cent in 1999, and did not sink below 99.5% in 2000, which implies that VIBER performs somewhat less efficiently.

4.2.2 The NBH's accounts system maintained for customers

The NBH's accounts service (comprising credit, deposit and foreign exchange accounts) is available for customers before the opening and after the closing time of VIBER, and for non-VIBER participant banks, during operating hours.

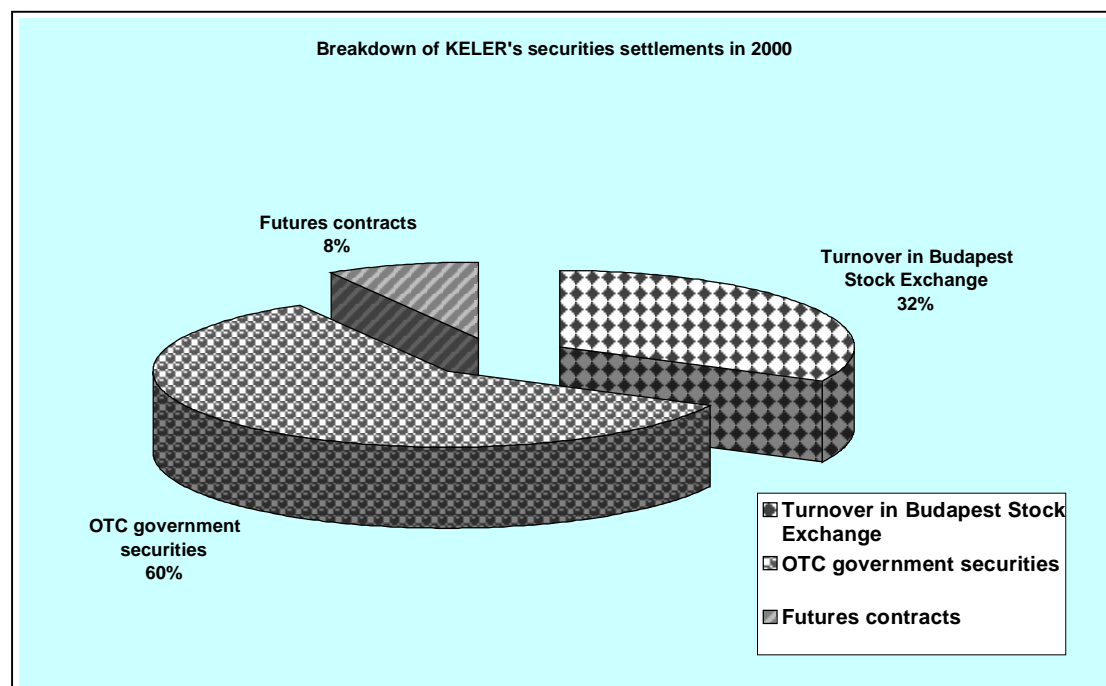
In addition to settling the IBI matrix, which contains payments cleared in ICS, settling the forint leg of foreign exchange transactions with the central bank also involves high amounts. In the latter case, debits are also entered into a particular bank's account even if there are not sufficient funds on its account, since the foreign exchange leg of the settlement by the central bank is final. If that is the case, the bank's account is in debit when entering the VIBER system, which means that no further payment order can be settled until the lacking funds are provided. The average size of central bank deposits settled in the NBH's accounts system exceeds HUF 300 million per deposit, comprised of non-VIBER participants' transactions with the NBH.

4.3 Securities settlements

Linking VIBER with the gross real-time securities settlement system of KELER enabled securities transactions to be settled in both systems in real time on a gross basis. Implementing the DVP principle in this manner, defined as model 1 by the 1992 BIS CPSS report "Delivery versus Payment in Securities Settlement Systems", is a highly advanced solution even by international comparison.¹³

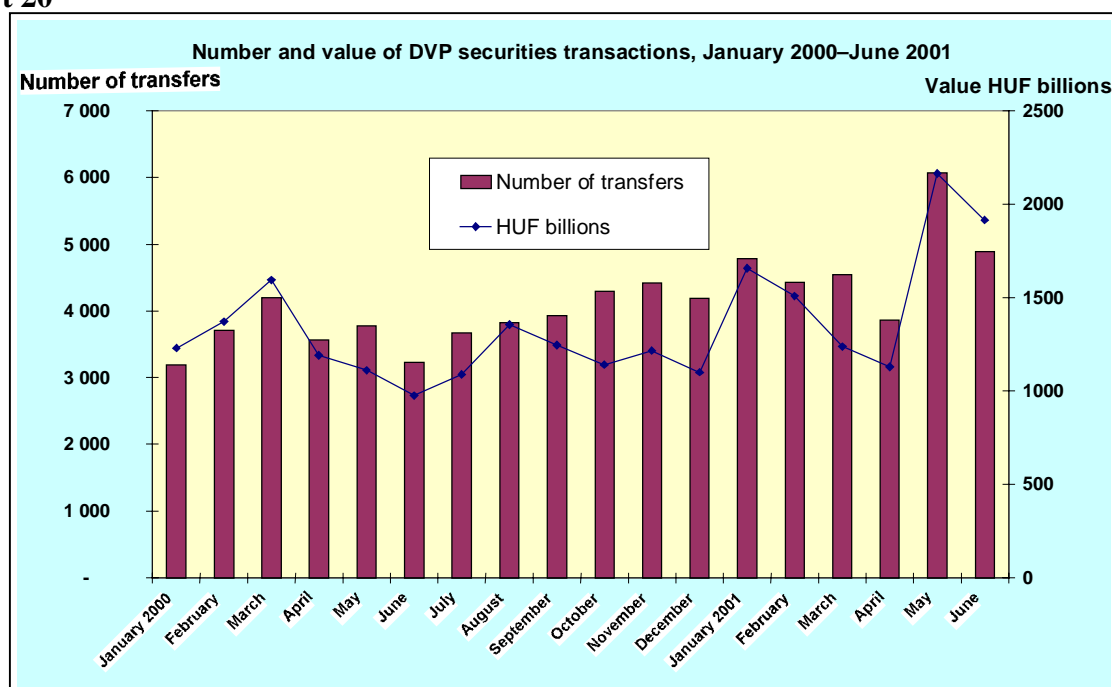
KELER's securities settlement system executes the final settlement of the equities, government securities and futures transactions of the Budapest Stock Exchange, forward contracts of the Budapest Commodity Exchange and interbank OTC trade in government securities.

Chart 19



Transactions where one of the parties is a bank involve interbank settlement, since KELER does not provide a cash accounts service for banks. Since the launch of VIBER, turnover has risen at a strong, although highly volatile pace in terms of both value and number.

Chart 20



In respect of the primary placement of government securities, payment is made using VIBER, and upon maturity of these securities, ICS is used.

Last year, it became possible for securities brokers to credit and debit funds to their exchange accounts at KELER through VIBER. Due to the low fees charged by KELER, the tendency is to use ICS for crediting funds to investment service providers' KELER accounts, and to use the real-time system during the business day for transferring end-of-day balances from KELER's accounts to the banks' own accounts.

5 Liquidity management in the payment systems

The liquidity (funds) of ICS and VIBER participants¹⁴ is determined by their account balances with the central bank together with the intraday credit limit available free of charge. The amount of account balances in turn depends on the ratio of the reserve requirement.¹⁵ Banks set the starting amount of the limit prior to the start of overnight ICS processing, and this cannot be altered until VIBER opens. During VIBER operating hours the amount of the limit can be

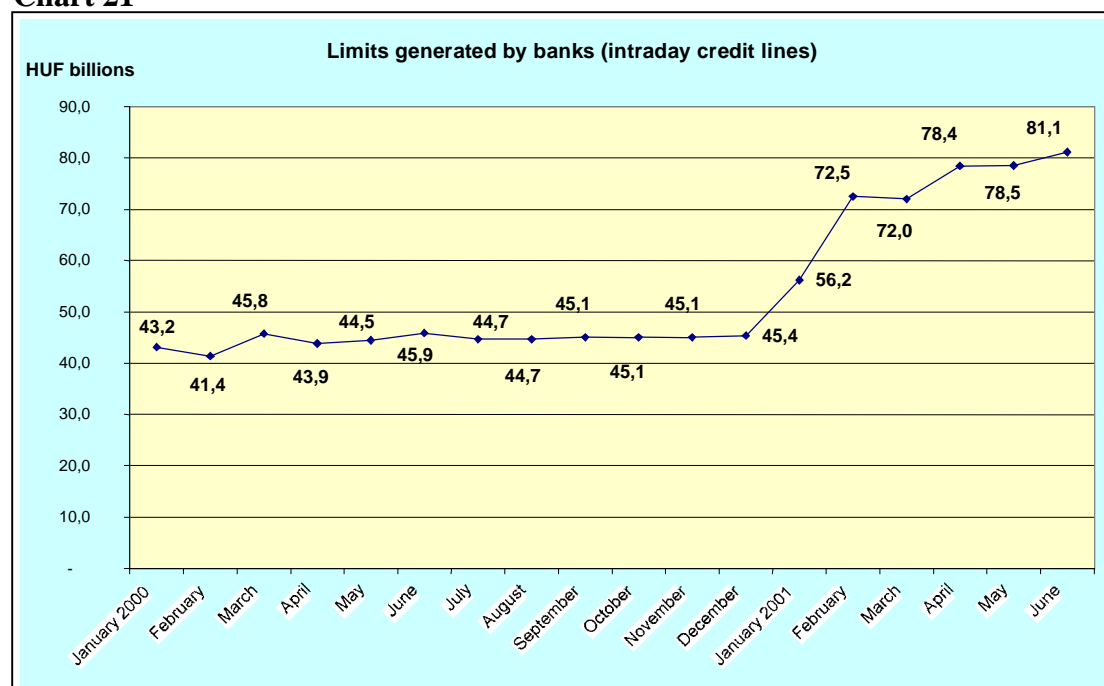
¹³ Hungary is the first country in Central and Eastern Europe to have such an advanced system. In Western Europe, Switzerland and France have similar interlinked funds transfer and securities settlement systems.

¹⁴ Including KELER, but excluding the Hungarian State Treasury, the Hungarian Post Office and the NBH.

¹⁵ The reserve ratio, set at 11 per cent in 2000, must be satisfied on a monthly average basis.

changed as desired at any point in time depending on the amount of securities tied up at KELER. With not all banks creating limits, in general the number of limit-makers ranges from 18 to 23, amounting to an average of HUF 44 billion per day in 2000. The number of the banks which changed the limit was not high either. During the first half of 2001, limit setting started to become more widespread. The extent of limit use seems to be associated with the banks' average access to covering balances (in other words, banks whose average account balances fall short of the daily average of debit transfers are more likely to set limits). Monthly fluctuations in daily limits are shown in the following Chart.

Chart 21



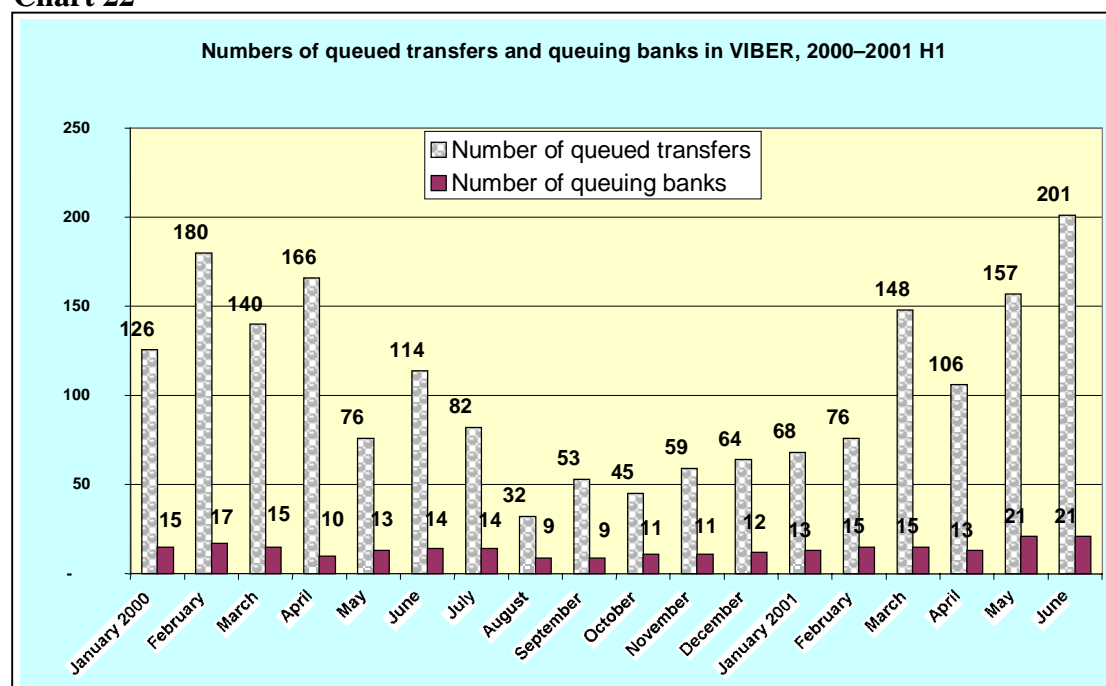
In January 2001, daily average payment flows (through ICS and NBH combined) amounted to 0.7 times the value of account balances available for banks at the start of a business day, in other words, the cover rate (debit orders/available covering balances) was favourable in terms of a smooth flow of payments. A value under 1.0 means that each funds transfer is settled, even if on a given day the bank does not receive a single incoming transfer. By June, this ratio had risen to 1.0, ranging between 0.5 and 15.5. Average monthly debit transfers for individual banks amounted to between 0.3 and 97.2 times the account balances. The larger the value, the more circumspection is needed in liquidity management in order to avoid momentary gridlock.

Should a bank's account balance be in debit at the end of the day, which entails that the intraday credit facility becomes an end-of-day credit, the central bank will extend overnight credit collateralised with securities. This happened on only three occasions amounting in total to HUF 2.1 billion in 2000. During the months of January to August 2001, banks received a total of HUF 14.8 billion in end-of-day credit on 11 occasions, including a credit extension of HUF 11.1 billion in the month of June alone. This large value reflects liquidity problems arising in the aftermath of foreign exchange liberalisation, when some banks had to rely on central bank credit to fill in their end-of-day liquidity shortfall.

Payment orders that have insufficient covering balances are queued up. As liquidity management is not possible during overnight ICS processing, in the absence of sufficient covering funds, transfer orders still being queued can only be processed the following day. In 2000, banks queued transfers during the overnight ICS processing on 15 occasions for a total of HUF 13.4 billion, while during the first six months of 2001, the corresponding figures were 8 and HUF 106.8 billion, respectively, due largely to calculation error. During the morning hours of the following day all queued transfer orders were settled in ICS processing.

The group of banks queuing in VIBER was relatively stable. The number of queues in 2000 and in the first half of 2001 (with more than one payment orders queued at the same time) are shown in Chart 22 (figures exclude the Hungarian Post Office, which has no customers).

Chart 22



Some banks have not made an effort to maintain continuous liquidity, which often results in prolonged queuing from VIBER's opening time until mid-day. The continuous and frequent occurrence of queuing suggests that banks do not always observe the two-hour rule when sending payment messages on behalf of customers. Nevertheless, the queues were eliminated by the end of every business day at the latest, with not a single payment order returned unsettled because of a liquidity shortfall.